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Performance comparison of a pair of Lowenstein–Jensen media supplemented with pyruvate or glycerol, and the combination of both supplements in a single Lowenstein–Jensen medium for the growth support of the *Mycobacterium Tuberculosis* complex

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ABSTRACT

Objective/Background: To evaluate the performance of Lowenstein–Jensen medium (LJ) supplemented with pyruvate and glycerol (LJPG), compared with LJ supplemented with pyruvate (LJP) or glycerol (LJG) for the support of mycobacterial growth.
Method: This study used 100 Ziehl-Neelsen-confirmed positive mycobacterium growth indicator tube 960 culture samples that were obtained from clinical samples during routine diagnosis. All cultures were inoculated in parallel on LJG/LJP and on LJGP, which were incubated and read weekly for the evidence of growth. The mycobacterial recovery rate, contamination rate, and time to detection were compared.
Result: The recovery rate for LJG/LJP and for LJPG was 90% (90 samples) and 88% (88 samples), respectively (kappa p-value, 0.9). There was no significant difference in the contamination rate, which was 8% (8 samples) for LJG/LJP and 9% (9 samples) for LJPG. Mycobacterial growth was faster in LJPG (1.6 weeks) than in LJG/LJP (2 weeks).
Conclusion: A single LJPG slope was not significantly different, compared with the usual pair of LJG or LJP slopes. This is a promising new culturing approach that could be used in *Mycobacterium africanum*-endemic in West African countries. It significantly reduces labor time and consumable costs and more quickly detects the *M. tuberculosis* complex.

Conflicts of interest

The authors have no conflicts of interest to declare.

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